



Wildlife Services Seeking Solutions Through Research

United States
Department of
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Animal and
Plant Health
Inspection
Service

**National Wildlife
Research Center**



Reducing Blackbird Damage to Feedlots and Ripening Sunflower Crops

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National Wildlife Research Center Scientists Address the Concerns of Sunflower Producers and Feedlot Managers

Wildlife Services' (WS) National Wildlife Research Center (NWRC) is the only Federal research facility devoted exclusively to resolving conflicts between people and wildlife through the development of effective, selective, and acceptable methods, tools, and techniques. NWRC's Bismarck, ND, field station is ideally located to study methods for managing blackbird damage to sunflower crops in the northern Great Plains.

Blackbirds and starlings damage grain crops and eat livestock feed, causing significant economic losses to agricultural producers. NWRC scientists are studying ways to refine current damage abatement methods and develop new methods for reducing damage. In addition, researchers are looking to expand capabilities to target specific problem-causing blackbird populations on both local and regional scales with predictable results. Research on the effectiveness of herbicides in reducing the breeding and roosting habitats of



local blackbird populations, may provide suitable information for predicting the effects of altering roosting habitats on a regional scale. Small-scale field studies designed to test bird repellants may also provide enough information to allow researchers to model the efficacy of these techniques on a wide-spread basis. In addition, the development and use of statistically validated computer models, which integrate geographic information and species-specific population parameters to monitor and predict population changes on local, regional, and national scales, may lead to more practical and economical solutions to bird damage problems.

Major Research Accomplishments:

- WS determined the costs and benefits of various application levels of glyphosate to manage cattail density and related blackbird roosting populations in marsh habitats.
- WS refined strategies for the operational use of DRC-1339 to reduce blackbird damage to rice and sunflower crops.

Applying Science and Expertise to Wildlife Challenges

Cattail Management— In the late summer, just prior to harvest, blackbirds roost in wetland cattail stands adjacent to many sunflower fields. In an effort to manage blackbird populations and reduce damage to sunflower crops, NWRC scientists are studying ways to improve the cost-effectiveness of glyphosate herbicide applications that reduce the density of these cattail stands.

Population Modeling—NWRC and North Dakota State University (NDSU) are collaborating on the development of population models describing the distribution, abundance, dynamics, and bioenergetics of blackbirds in Central North America. This information will provide an objective method for evaluating the effects of lethal and nonlethal management techniques on local and regional blackbird populations. In addition, a comprehensive database on the basic ecology and regional movements of blackbirds in relation to sunflower and livestock feed damage is being developed in order to apply new habitat management approaches to this problem.

Blackbird Reproduction—NWRC and NDSU scientists are quantitatively determining the effects on blackbird reproduction when territorial male blackbirds are systematically removed, disrupting blackbird pair bonding. If effective, this technique could provide a new environmentally safe and economical management tool that could be easily implemented by wildlife managers and sunflower growers to reduce local sunflower damage.

Repellants and Physical Barriers—NWRC researchers are working to identify, develop, and improve the use of chemical repellants and physical barriers for reducing blackbird damage to ripening sunflower crops. These scientists are collecting efficacy and

cost-benefit data to support Federal registration of environmentally safe and effective feeding deterrents. In addition, they are developing operational guidelines and an integrated application strategy for the use of bird repellants on sunflowers.

Avian Use of Ripening Sunflower Fields—NWRC and university scientists are conducting intensive nontarget bird surveys in 12 sunflower fields located in North Dakota to document birds that could be negatively affected by applications of DRC-1339-treated rice, which is used to reduce blackbird damage to sunflowers. The 12 test fields were surveyed 84 times. Thirty seed-eating nontarget birds were observed in the sunflower fields, including 16 species of sparrows and 3 species of finches. Nontarget members of the blackbird family that were observed and are sensitive to DRC-1339 included one bobolink and two western meadowlarks.

Environmental Impact Statement—NWRC scientists are assisting in the preparation of an Environmental Impact Statement titled "Reducing Damage Caused by Blackbirds to Commercial Sunflower Crops in North Dakota and South Dakota." This document is based on scientific research conducted by NWRC over the last decade.

Groups Affected By These Problems:

- Sunflower producers
- South Dakota Oilseed Council
- North Dakota Department of Agriculture
- South Dakota Department of Agriculture
- Feedlot Owners Association
- Consumers of sunflowers, sunflower seeds, sunflower oil, and other sunflower products
- Processors, manufacturers, suppliers, and sellers of sunflower products

Selected Publications:

- Homan, H.J., G.M. Linz, R.M. Engeman, and L.B. Penry. 2002. Spring dispersal patterns of red-winged blackbirds staging in east-central South Dakota. *Proceedings of the Sunflower Research Workshop* 24:155-158.
- Sawin, R.S., G.M. Linz, and W.J. Bleier. 2002. Improving blackbird population control with targeted baiting programs: biological considerations. *Proceedings of the Sunflower Research Workshop* 24:148-150.
- Linz, G.M., H.J. Homan, and R.L. Wimberley. 2001. Avian use of various mixtures offered in harvested cornfields during spring migration in South Dakota. Johnston, J.J., ed. *Pesticides and wildlife*. Washington, D.C.: American Chemical Society: 345-358.
- Linz, G.M., B.D. Peer, H.J. Homan, R.L. Wimberly, D.L. Bergman, W.J. Bleier, and L.B. Penry. 2001. Has an integrated pest management approach reduced blackbird damage to sunflowers? *Proceedings of the 23rd Sunflower Research Workshop*; 17-18 January 2001; Fargo, ND. Bismarck, ND: National Sunflower Association: 170.
- Peer, B.D., H.J. Homan, G.M. Linz, and W.J. Bleier. 2001. Impact of blackbird damage to sunflowers: bioenergetic and economic models, pg. 169. *Sunflower Research Forum*. January 17-18, 2001. Fargo, ND.
- Sawin, R.S., G.M. Linz, and W.J. Bleier. 2001. Local removal of red-winged blackbirds: potential for blackbird management? pp. 174-176. *Sunflower Research Forum*. January 17-18, 2001. Fargo, ND.